

REMARKS

Claims 1, 3-20, 22-39 and 41-48 are currently pending in the subject application and are presently under consideration. Claims 1, 20 and 39 are amended solely to correct minor informalities. Claims 47 and 48 are newly added. Support for the new claims may be found at least, for example, in the specification as set forth in U.S. Pub. No. 2005/0215196 at paragraphs [0053], [0054] and [0057].

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1, 3-19, 41 and 44 Under 35 U.S.C. §101

Claims 1, 3-19, 41 and 44 stand rejected under 35 U.S.C. §101 as allegedly being directed to non-statutory subject matter. Withdrawal of the rejection is respectfully requested.

Independent claim 1 and claims dependent thereon are statutory under *In re Bilski*. *In re Bilski* held “the machine-or-transformation test, properly applied, is the governing test for determining patent eligibility of a process under § 101,” No. 2007-1130, slip op. at 15 (Fed. Cir. 2008). The machine prong of the *Bilski* test is whether a claimed process “is tied to a particular machine or apparatus.” *Id.* at 10.

Independent claim 1 is clearly tied to a particular machine or apparatus and therefore statutory under *In re Bilski*. Claim 1 recites

A method of communications from a piconet, comprising:

engaging in **intra-piconet communications**;

receiving a pilot signal from a foreign terminal outside the piconet;

determining a strength of the pilot signal;

exchanging messages with the foreign terminal if the pilot signal

strength is below a threshold; and

establishing a **peer-to-peer connection** with the foreign terminal.

(Emphases added.) Thus, claim 1 explicitly recites such technology-specific operations as engaging in intra-piconet communications, exchanging messages with a foreign terminal and establishing a peer-to-peer connection. These features unambiguously link the subject matter of claim 1 with a particular machine or apparatus (e.g., network hardware). Claim 1 therefore

meets at least the machine prong of the *In re Bilski* test, as do claims 3-19, 41 and 44 for at least the reason that they depend on claim 1.

Moreover, claims 1, 3-19, 41 and 44 meet the transformation test of *In re Bilski*, which further held that “[a] claimed process is patent-eligible if it transforms an article into a different state or thing.” No. 2007-1130, slip op. at 24 (Fed. Cir. 2008). *Bilski* observed that “[t]he raw materials of many information-age processes ... are electronic signals and electronically-manipulated data.” *Id.* at 25. In the process recited in claim 1, for example in “exchanging messages with the foreign terminal,” electronic data corresponding to messages must, at a minimum, be modulated and demodulated for transmission and reception, and consequently be transformed into a different state. Consequently, claim 1 is statutory for the additional reason that it recites a transformation of an article into a different state or thing. Withdrawal of the rejection is therefore appropriate.

II. Rejection of Claims 1, 3-6, 8-11, 13-16, 18-20, 22-25, 27-30, 32-35, 37-39, 41-43, and 46 Under 35 U.S.C. §103(a)

Claims 1, 3-6, 8-11, 13-16, 18-20, 22-25, 27-30, 32-35, 37-39, 41-43, and 46 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gandolfo (US 7,184,767) in view of Choi (US 6,967,944). Withdrawal of this rejection is respectfully requested for at least the reason that Gandolfo and Choi fail to disclose or suggest all of the claimed features.

As to independent claim 1, the combination of Gandolfo and Choi is deficient at least as to “establishing a peer-to-peer connection with the foreign terminal,” as recited in claim 1. The Office Action cites Gandolfo at col. 11, lines 47-58 as allegedly disclosing establishing a peer-to-peer connection as claimed (Office Action, pp. 5-6). In particular, the Office Action contends that the connection between elements 522a and 522b of Gandolfo corresponds to the claimed peer-to-peer connection. *Id.* The Office Action further comments, in response to arguments set forth by Applicant’s representative in the Reply filed June 23, 2009, as follows: “Peer-to-Peer is system is which two or more nodes can initiate communications with each other. Usually describes a network in which all node have the ability to share resources with other nodes” (Office Action, p. 23).

Applicant’s representative respectfully reiterates that the connection between elements 522a and 522b of Gandolfo is *not* a peer-to-peer connection, but instead, a master-slave or client-

server connection, where the elements 522a and 522b act as proxies for controller elements. Published sources characterize such connections in contradistinction to peer-to-peer connections. See, e.g., the following definition from the web site [http://compnetworking.about.com/\(Webopedia\):](http://compnetworking.about.com/(Webopedia):) “Often referred to simply as *peer-to-peer*, or abbreviated *P2P*, a type of network in which each workstation has equivalent capabilities and responsibilities. This differs from client/server architectures, in which some computers are dedicated to serving the others.” (Emphasis in original.)

As another example, see the following definition from <http://searchnetworking.techtarget.com:> “Peer-to-peer is a communications model in which each party has the same capabilities and either party can initiate a communication session. Other models with which it might be contrasted include the client/server model and the master/slave model.”

The popular online reference Wikipedia defines peer-to-peer as follows:

A peer-to-peer, commonly abbreviated to P2P, distributed network architecture is composed of participants that make a portion of their resources (such as processing power, disk storage or network bandwidth) directly available to other network participants, without the need for central coordination instances (such as servers or stable hosts). Peers are both suppliers and consumers of resources, in contrast to the traditional client-server model where only servers supply, and clients consume.

Note that each of the above sources defines peer-to-peer as opposed to, i.e., in terms of how peer-to-peer is different from, master-slave or client-server models.

In view of the above, it is apparent that the connection between elements 522a and 522b of Gandolfo is not a peer-to-peer connection. See, e.g., Gandolfo at col. 11, lines 47-55:

As shown in FIG. 6C, device A-2 **522a** in network A 505a is **controller-enabled** (i.e., it is capable of becoming a controller). And when device A-2 522a forms a child network, the usable physical area 560a of that child network is large enough to contain device B-2 522b. Similarly, if device B-2 **522b** in network B 505b were also **controller-enabled** (i.e., capable of becoming a controller), then it could form a child network whose usable physical area 560b was large enough to contain device A-2 522a.

(Emphases added.) Thus, in Gandolfo, either 522a or 522b is a controller, which necessarily means that the other party to the connection is controlled. This describes a master-slave connection or client-server connection, not a peer-to-peer connection. Furthermore, Gandolfo explicitly calls 522a or 522b “proxy nodes” (e.g., at col. 12, line 8). As is well understood, a “proxy” is a substitute or stand-in; in this case, 522a or 522b are stand-ins for controllers 510a and 510b, respectively.

Moreover, even assuming only for the sake of argument that the connection between 522a and 522b could reasonably be described as a peer-to-peer connection, Gandolfo and Choi would still be deficient as to the asserted rejection under §103 for at least the reason that, even in combination, these references fail to disclose or suggest “receiving a pilot signal from a foreign terminal outside the piconet,” “determining a strength of the pilot signal,” and “exchanging messages with the foreign terminal if the pilot signal strength is below a threshold,” as recited in claim 1. More specifically, Gandolfo is silent regarding any operation conditioned on whether a pilot signal strength is below a threshold. Instead, in Gandolfo “beacon messages” are sent out by controllers 510a and 510b and contain network information. See, e.g., col. 11, line 65 to col. 12, line 7:

In the indirect overlap situation disclosed in FIG. 6C, device A-2 522a learns about the existence and settings of network B 505b by monitoring its beacon messages that are forwarded by device B-2 522b. Device A-2 522a then forwards this information to the controller 510a for network A 505a. Similarly, device B-2 522b learns about the existence and settings of network A 505a by monitoring its beacon messages that are forwarded by device A-2 522a. Device B-2 522b then forwards this information to the controller 510b for network B 505b.

It is by way of these beacon messages that a connection is formed by controllers 510a and 510b between proxy nodes 522a and 522b. See, e.g., Gandolfo at col. 12, lines 8-11 (directly following the above-quoted passage): “In this way a pair of proxy nodes are formed by one device from each network 505a, 505b that create a child network. This child network then handles the functions of wireless bridging between the two networks 505a and 505b.” In view of the foregoing, it is clear that the beacon messages described in Gandolfo in no way correspond to a pilot signal from a foreign terminal as recited in claim 1.

Moreover, Choi does not remedy any deficiencies in Gandolfo. Choi relates generally to a WLAN (wireless local access network) with a central access point (AP) and multiple stations (STA). The AP collects connectivity information from the STAs and allocates resources accordingly. See, e.g., Choi at col. 6, lines 4-23. However, Choi never suggests, for example, “exchanging messages with the foreign terminal if the pilot signal strength is below a threshold,” as recited in claim 1. Indeed, in Choi, a STA reports to the AP that it *cannot* communicate with another STA, based on an interference level (see, e.g., col. 5, lines 54-60). Accordingly, like Gandolfo, Choi is silent regarding any peer-to-peer connectivity.

As to independent claim 20, along the above lines, Gandolfo and Choi fail to support the rejection for at least the reason that, even in combination, they fail to disclose or suggest “a controller configured to exchange messages with the foreign terminal to facilitate establishing a peer-to-peer connection with the foreign terminal if the pilot signal strength is below a threshold.” Similarly, regarding independent claim 39, Gandolfo and Choi are deficient at least as to “means for exchanging messages with the foreign terminal to facilitate establishing a peer-to-peer connection with the foreign terminal if the pilot signal strength is below a threshold,” as recited.

Regarding independent claim 46, Gandolfo and Choi fail to support the rejection for at least the reason that, even in combination, they fail to disclose or suggest “based on being designated an edge terminal, listen for pilot signals from isolated terminals not included in the piconet.” To reject claim 46, the Office Action uses the same reasoning applied to reject claim 1, again citing Gandolfo at col. 11, lines 47-58, and denoting element 522a in FIG. 6C as the claimed edge terminal. However, contrary to the Office Action, Gandolfo is completely silent regarding “based on being designated an edge terminal” as recited in claim 46; there is simply no mention of controller 510a *designating* element 522a in any respect. Moreover, Gandolfo contains no hint of the feature “listen for pilot signals from isolated terminals” as further recited in claim 1. Instead, Gandolfo states that “device A-2 522a learns about the existence and settings of network B 505b by monitoring its beacon messages that are forwarded by device B-2 522b” (col. 11, line 66 to col. 12, line 1). As discussed previously, the beacon messages are transmitted by controllers 510a and 510b; they are not pilot signals from device 522b.

Gandolfo and Choi are still further deficient regarding “if a pilot signal with a signal strength below a threshold is detected from an isolated terminal, add the isolated terminal to a

peer-to-peer connectivity list, the peer-to-peer connectivity list identifying terminals outside the piconet that can be reached with peer-to-peer transmission,” as additionally recited in claim 46. Along lines previously discussed, Gandolfo and Choi contain no suggestion of any operation based on “if a pilot signal with a signal strength below a threshold is detected” by a designated edge terminal, as in claim 46. Instead, Gandolfo relies on beacon messages sent by controllers 510a and 510b, not a pilot signal from device 522b. Moreover, both Gandolfo and Choi are silent regarding “a peer-to-peer connectivity list.” Rather, as noted previously, Gandolfo describes using nodes 522a and 522b as “proxy nodes” to perform “wireless bridging” (col. 12, lines 8-11). Choi makes no mention whatever of peer-to-peer connectivity.

Further, Gandolfo and Choi fail to disclose or suggest the features “route a call from the isolated terminal to a far-end terminal of the piconet, based on being included in a peer-to-peer connectivity list of the isolated terminal identifying each known edge terminal of the piconet,” as additionally recited in claim 46. The Office Action cites Gandolfo at col. 11, line 20 to col. 12, line 63, and “especially col. 12, lines 56-63” as allegedly having disclosure corresponding to the noted features (Office Action, p. 18). However, neither the cited portion of Gandolfo, nor Gandolfo as a whole, in any way suggests any operation “based on being included in a peer-to-peer connectivity list of the isolated terminal identifying each known edge terminal of the piconet,” as recited in claim 46. Instead, in this regard, Gandolfo states: “Devices should also periodically be forced by its controller 510a, 510b to look for adjacent networks and assume a proxy role with those networks if possible” (col. 12, lines 18-20). Thus, Gandolfo merely describes forming additional proxy nodes along lines discussed previously. Moreover, in col. 12, lines 56-63, particularly pointed out in the Office Action, Gandolfo specifically refers to acts by controllers 510a and 510b, not by a designated edge terminal as in claim 46. See, e.g., col. 12, lines 56-58: “Each controller 510a, 510b will then be responsible for transmitting a broadcast message (beacon or other transmission) at a regular interval (e.g., every second or two).”

The Office Action further cites Choi at col. 5, lines 9-31 (Office Action, p.18). However, as discussed previously, the STAs in Choi do not form peer-to-peer connections.

In light of the above, the combination of Gandolfo and Choi clearly does not support the asserted rejection of independent claims 1, 20, 39 and 46. Moreover, Gandolfo and Choi are likewise deficient as to the dependent claims for at least reasons discussed above, and further in view of features recited in the dependent claims beyond those of the independent claims. For

example, claim 3 recites “the exchanged messages comprise a transmission to the foreign terminal including a list of a plurality of terminals in the piconet.” The Office Action (p. 6) cites Gandolfo as allegedly disclosing the noted features. However, as discussed previously, Gandolfo never suggests claim 1’s “exchanging messages with the foreign terminal if the pilot signal strength is below a threshold,” and consequently is likewise necessarily deficient as to claim 3’s “the exchanged messages comprise” Claim 22 recites features corresponding to those of claim 3, and therefore similar remarks apply.

As another example, claim 6 recites “the establishment of the peer-to-peer connection comprises negotiating a data rate and transmission power level.” The Office Action alleges (p. 7) that Gandolfo has corresponding disclosure. However, along previous lines, in Gandolfo all operations are controlled by controllers 510a and 510b, and therefore devices 522a and 522b never negotiate in a peer-to-peer fashion. Accordingly, Gandolfo fails to disclose or suggest the features of claim 6. Likewise, Gandolfo is deficient as to claim 25, which recites features corresponding to those of claim 6.

For at least the foregoing reasons, withdrawal of the rejection of claims 1, 3-6, 8-11, 13-16, 18-20, 22-25, 27-30, 32-35, 37-39, 41-43, and 46 as being unpatentable over Gandolfo in view of Choi is appropriate.

III. Rejection of Claims 7, 12, 26, and 31 Under 35 U.S.C. §103(a)

Claims 7, 12, 26, and 31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gandolfo in view of Choi, and further in view of Watanabe et al. (US 2002/0080855) (“Watanabe”). Withdrawal of this rejection is respectfully requested for at least the reason that, even in combination, Gandolfo, Choi and Watanabe fail to disclose or suggest all of the claimed features.

Claims 7 and 12 depend on claim 1, and claims 26 and 31 depend on claim 20. Therefore, claims 7, 12, 26 and 31 are allowable over Gandolfo and Choi for at least that reason, as well as for the additional features they recite. Watanabe does not cure the deficiencies in Gandolfo and Choi, being likewise silent, for example, concerning claim 1’s “receiving a pilot signal from a foreign terminal outside the piconet,” “determining a strength of the pilot signal,” “exchanging messages with the foreign terminal if the pilot signal strength is below a threshold,”

and “establishing a peer-to-peer connection with the foreign terminal,” and the corresponding features of claim 20.

The combination of Gandolfo, Choi and Watanabe is still further deficient with respect to claims 7, 12, 26 and 31 for the features they recite beyond those of the independent claims. For example, the Office Action (p. 19) correctly observes that Gandolfo and Choi are silent as to claim 7’s “the establishment of the peer-to-peer connection further comprises negotiating code to spread peer-to-peer communications,” but alleges that Watanabe supplies the disclosure absent from Gandolfo and Choi, citing Watanabe at par. [0027]. To the contrary, Watanabe does not cure the deficiencies in Gandolfo and Choi. Par. [0027] of Watanabe states in pertinent part:

A carrier having a carrier frequency which is the same as the central frequency of a selected communication channel, is primary-modulated by an information signal and then secondary-modulated (spread-modulated) by a pseudo-noise code (spread code). The wireless network includes an ad hoc network for performing a peer-to-peer communication between stations in an area called a BSA (basic service area) and an infrastructure network for performing one-to-many communications among stations through an access point.

It can be seen that there is no suggestion in the above regarding, in particular, “*negotiating code to spread peer-to-peer communications*,” (emphasis added) as recited in claim 7 and 26.

IV. Rejection of Claims 17 and 36 Under 35 U.S.C. §103(a)

Claims 17 and 36 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gandolfo in view of Choi, and further in view of Papasakellariou et al. (US 7,133,435) (“Papasakellariou”). Withdrawal of this rejection is respectfully requested for at least the reason that, even in combination, Gandolfo, Choi and Papasakellariou fail to disclose or suggest all the claimed features.

Along lines discussed above, claims 17 and 36 depend on claims 1 and 20, respectively, and consequently are allowable over Gandolfo and Choi for at least that reason. Papasakellariou does not cure the deficiencies in Gandolfo and Choi, being similarly silent as to, for example, claim 1’s “receiving a pilot signal from a foreign terminal outside the piconet,” “determining a

strength of the pilot signal,” “exchanging messages with the foreign terminal if the pilot signal strength is below a threshold,” and “establishing a peer-to-peer connection with the foreign terminal,” and claim 20’s “a controller configured to exchange messages with the foreign terminal to facilitate establishing a peer-to-peer connection with the foreign terminal if the pilot signal strength is below a threshold, the controller further being configured to support intra-piconet communications.”

V. Rejection of Claims 44 and 45 Under 35 U.S.C. §103(a)

Claims 44 and 45 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gandolfo in view of Choi, and further in view of Icacono et al. (US 2005/0176468) (“Icacono”). Withdrawal of this rejection is respectfully requested for at least the reason that, even in combination, Gandolfo, Choi and Icacono fail to disclose or suggest all the claimed features. Claims 44 and 45 depend on claims 1 and 20 respectively, and therefore Gandolfo, Choi and Icacono do not support the rejection for at least the reason that even in combination, they fail to disclose or suggest the features of claims 1 and 20 discussed previously.

VI. New Claims

New claims 47 and 48 are submitted herewith. None of the art of record anticipates or renders obvious the features recited in claims 47 and 48. For example, along lines discussed above, none of the art or record discloses or suggests “the controller is further configured to determine whether the communications terminal has been designated as a piconet edge terminal, and if so, enable the receiver to detect the pilot signal,” as recited in claim 47. Moreover, none of the art of record discloses or suggests “the controller is further configured to ... monitor an exchange of signaling messages pursuant to a call between a local terminal in the piconet, and a remote terminal outside the piconet ... determine whether the call involves high-latency communications ... and if so, provide feedback relating to the call between the local terminal and the remote terminal,” as recited in claim 48.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [QUALP842US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

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